UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,953	09/26/2001	Christoph Glingener	112740-304	1580

29177 7590 02/08/2005

BELL, BOYD & LLOYD, LLC
P. O. BOX 1135
CHICAGO, IL 60690-1135

EXAMINER	
SINGH, DALZID E	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/963,953	Applicant(s) GLINGENER ET AL.	
	Examiner Dalzid Singh	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-9,11,12,16-18,21-24,26 and 27* is/are rejected.

7)☒ Claim(s) *4,10,13-15,19,20,25 and 28-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *31 December 2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "optical delay time element" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 27, recite, "...control error is determined by wobbling an operating point of the controllable optical delay time element" However, Fig. 1 of applicant's disclosure shows that the control signal (rs) is transmitted from control unit (CU) to control input of the delay element (ELE). The control error (rs) is determined by the control unit (CU) for controlling the delay element (ELE). Based on this, the claims as written fails to particularly point out and distinctly claim the subject matter.

4. Claim 5 recites the limitation "the controllable electrical delay time element" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 5, 7, 8, 11, 12, 16-18, 22, 23, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al (US Patent No. 6,763,197).

Regarding claims 1 and 16, Hirano et al dislcose optical transmission system, as shown in Fig. 9, comprising the steps of:

outputting a portion of the optical RZ transmission signal (MZ modulator (25, 27) output optical RZ signal; see col. 8, lines 54-60);

converting the output portion of the optical RZ transmission signal to an electrical signal (photo-electric converter (39) converts the optical signal to electric signal); and

controlling the phase-synchronous supplying of at least one of the optical pulsed signal and the electrical data signal (as shown in Fig. 9, Hirano et al show feedback which control the delay element (35); since the optical signal is influence by the delay element, therefore by controlling the delay element the optical signal is also controlled).

Hirano et al does not specifically disclose establishing at least one of the power, the current and the voltage of the electrical signal in a narrow frequency band around a frequency that corresponds to half the data rate. However, in col. 10, lines 27-42, Hirano et al disclose that the signal is extracted for monitoring purposes. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to establish at least one of power, current and voltage of the electrical signal. One of ordinary skill in the art would have been motivated to do this in order to obtain signal information and provide correction through feedback. Furthermore, in Fig. 9, Hirano et al show selection unit (37) to select narrow frequency band of the signal which will result in half the data rate.

Regarding claims 2 and 17, as shown in Fig. 9, Hirano et al show the step of controlling the phase-synchronous supplying of the optical pulsed signal via a controllable optical delay time element (the delay element (35) is controlled by delay control circuit).

Regarding claims 3, 5 (as far as understood) and 18, as shown in Fig. 9, Hirano et al show forming at least one control signal and supplying the control signal to the to the controllable optical delay time element (the control signal is generated by delay control circuit (41) to control the delay element (35)). Hirano et al differ from the claimed invention in that Hirano et al do not specifically disclose that the control signal is formed using at least one of the established power, current and voltage values. However, as discussed above, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to establish at least one of power, current and voltage of the electrical signal (see rejection of claim 1 and 16).

Regarding claims 7 and 22, as shown in Fig. 9, Hirano et al show that the output portion of the optical RZ transmission signal is converted to an electrical signal via an optoelectrical transducer (39).

Regarding claims 8 and 23, as discussed in col. 9, lines 59-62, Hirano et al disclosed that the optoelectrical transducer is a photodiode.

Regarding claims 11 and 26, in view of the rejection of claims 1 and 16, Hirano et al disclose method of maximizing intensity of the signal (the intensity of the signal could be related to the power of the signal).

Regarding claims 12 and 27 (as far as understood), as shown in Fig. 9, Hirano et al show control of optical delay element, therefore it would have been obvious that the operating point of the optical delay time element is changed (or wobbled).

7. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al (US Patent No. 6,763,197) in view of Murai (US Patent No. 6,718,142).

Regarding claims 9 and 24, Hirano et al disclose delaying the optical signal via a controllable optical delay element after the signal is modulated and differ from the claimed invention in that Hirano et al do not vary the delay time of the optical pulsed signal via the controllable optical delay time element before being supplied to the electrooptical modulator. However, delaying the optical signal before of after modulation is a matter of design choice. Murai is cited to show such well known concept. In Fig. 3, Murai show controlling the optical delay element before modulating the optical signal. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify location of the delay element of Hirano et al by placing it before the modulator as taught by Murai. One of ordinary skill in the art would have been motivated to do this in order to adjust phase of the optical signal prior to modulation.

8. Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al (US Patent No. 6,763,197) in view of Shimizu et al (US Patent No. 6,236,488).

Regarding claims 6 and 21, as discussed above, Hirano et al disclose photo-electric converter which convert the optical signal to electrical and processing of such signal. Hirano et al differ from the claimed invention in that Hirano et al do not specifically disclose an electrical bandpass filter and a narrowband electrical amplifier. However, for processing the electrical signal, such elements are well known. Shimizu et al is cited to show such well known concept. In Fig. 6, Shimizu et al show electrical filter and electrical amplifier. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to process the signal using electrical filter and electrical amplifier. For example, the electrical filter and electrical amplifier can be placed after the photo-electric converter of Hirano et al. One of ordinary skill in the art would have been motivated to do such in order to separate the received signal from any unwanted noise and strengthen a desired signal level.

Allowable Subject Matter

9. Claims 4, 10, 13-15, 19, 20, 25 and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ooi et al (US Patent No. 5,805,321) is cited to show control unit for optical modulators producing multiplexed optical output signal.

Bergano (US Patent No. 6,310,709) is cited to show optical transmission system.

Suzuki et al (US Patent No. 6,459,518) is cited to show optical transmission apparatus.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272--3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
February 3, 2005

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER